

HP StorageWorks
Performance Advisor

Installation Guide

Version 1.7A



notice

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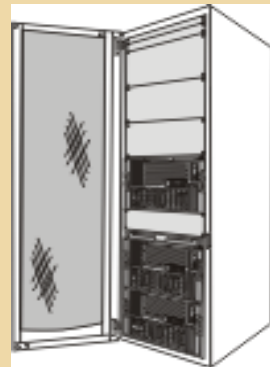
HP StorageWorks Performance Advisor Installation Overview

Please review the graphical overview presented below prior to following the installation procedures outlined in chapter 1.

1. Carefully review the minimum product requirements for your browser, disk array, management station, and hosts, as specified in chapter 1 of this install guide.



2. If you have not configured a command device on the array, you will need to do so. Map the device to the host server.



3. Install Performance Advisor on the management station.



4. Install Performance Advisor host agent on the host station(s).

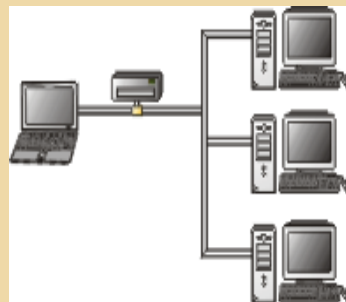


5. Use Performance Advisor.



Step 6, below, may be necessary to complete your PA configuration. Follow this step if you have host stations where you cannot install PA; this will allow you to enter host-to-array connectivity information.

6. To add connectivity information via the CLI, see the [UserHostConfig.pdf](#) file at [Tools/CmdLineUserInterface](#) on the Performance Advisor CD. To add connectivity information via the GUI, use the Data Grid Update screen, located under PA's Configuration tab.



HP StorageWorks Performance Advisor Installation Guide

Getting Started

Before installing HP StorageWorks Performance Advisor (PA), make sure that you follow these instructions:

- *Verify that your browser, disk array, management station, and hosts meet the minimum product requirements.*

See [“Browser Minimum Requirements” on page 7](#).

See [“Firmware Minimum Requirements” on page 7](#).

See [“Management Station Minimum Requirements” on page 8](#).

See [“Host Agent Minimum Requirements” on page 9](#).

Note *If you plan to integrate other applications such as HP StorageWorks Command View XP, additional free disk space is required. Refer to the individual hard disk space specifications on the product CD for these additional requirements.*

- *If any copies of PA have been previously installed, you will need to run the uninstall program before reinstalling the software.*

See “Uninstalling PA Management Station for Windows NT, 2000, and 2003” on page 32.

See “Uninstalling PA Host Agent for Windows NT and 2000” on page 32.

See “Uninstalling PA Host Agent for HP-UX, Sun Solaris, IBM AIX, and Linux” on page 32.

- *If Command View XP is running, make sure that all users are logged off.*
- *Verify whether or not a Command Device has been created. See “Creating a Command Device” on page 20 for further instructions.*

Caution *PA 1.7A is only compatible with CV XP 1.8. Please follow instructions specific to your applications.*

- *Make sure that you install PA in the following order:*

1. Install PA on the management station.
See “Installing PA as a Standalone Application” on page 11.
2. Install PA host agent on the host station.
See “PA Host Agent Installation for Microsoft Windows NT, 2000, and 2003” on page 17.
See “PA Host Agent Installation for HP-UX, Sun Solaris, Linux and IBM AIX” on page 18.

Browser Minimum Requirements

- Internet Explorer version 5.5 or 6.0 for Windows NT, 2000, or 2003
- or
- Netscape Navigator version 7.0 or greater for HP-UX

Note *Java JRE plug-in, version 1.4.2 or greater, is required if you are using Internet Explorer.*

Firmware Minimum Requirements

- XP256 arrays: firmware version 52.49.12.00/00 or greater is required
- XP512 arrays: firmware version 1.17.94.11/04 or greater is required
- XP48 arrays: firmware version 1.17.94.11/04 or greater is required
- XP128 and XP1024 arrays: firmware version 21.03.03.00/00 or greater is required. See the troubleshooting guide (accessed from the support page or on the product cd) for additional information.

You will need to meet the following hardware and operating system requirements for the management station. See the requirements specific to whether you run PA as a standalone product or with HP StorageWorks Command View XP.

Management Station Minimum Requirements

Note *All versions of PA can run as standalone products.*

Note *PA versions 1.04 and above are compatible with HP StorageWorks Command View XP 1.30 and above. If you are using a version of Command View XP that is earlier than 1.30, then use PA 1.03 or earlier.*

- CD-ROM drive
- 1 GHZ CPU or greater
- 1 GB RAM or greater
- 2.5 GB or more free space on hard drive (NTFS)
- Ethernet LAN card connected to the network
- Windows NT 4.0 (Service Pack 6a or greater), Windows 2000 (Service Pack 4 or greater), or Windows 2003 (32-bit) workstation or server

Host Agent Minimum Requirements

Make sure you meet the following hardware and operating requirements for the host station(s), depending on your system:

Microsoft Windows NT, 2000, and 2003:

- CD-ROM drive
- 128 MB RAM or greater
- 200 MHZ CPU or greater
- 10 MB or more free space on hard drive (NTFS)
- Ethernet LAN card connected to the network
- A command device on the array (see page 20)
- Windows NT 4.0 (Service Pack 6a or greater), Windows 2000 (Service Pack 4 or greater), or Windows 2003 32/64-bit host station (in 32-bit compatibility mode) workstation or server
- RAID Manager Library version 01.07.02 or greater (included with PA)
- JRE version 1.4.2_03 or greater for Windows 2003 32/64-bit host station (in 32-bit compatibility mode)

HP-UX, Sun Solaris, IBM AIX or Linux:

- HP-UX 11.XX, Sun Solaris 7, 8 or 9, or IBM AIX 4.3.3 or 5.1
- CD-ROM drive
- A command device on the array (See [“Creating a Command Device” on page 20.](#))
- RAID Manager Library version 01.07.02 or greater (included with PA)
- Linux only: Linux: Red Hat 7.1; Linux Kernel, version 2.4.2-2
- 75 MB disk space required for/opt.

Removing RAID Manager Library

Caution *Before you uninstall RAID Manager Library, make sure that Business Copy, Continuous Access utilities, or any other RAID Manager Library-dependent software can tolerate an upgrade. Only Host Agent installations will attempt to change RAID Manager Library versions; if RAID Manager Library is detected, the installation will ask if you want to upgrade. If you decide not to upgrade RAID Manager Library at this time, you can install the host agent now and keep your existing RAID Manager Library version. If desired, you can reinstall the host agent later. Be advised that if you do not upgrade RAID Manager Library to the latest recommended version, you may notice a loss of functionality within Performance Advisor. For more information about firmware and RAID Manager Library support, see the troubleshooting guide (accessed from the support page or on the product cd).*

To Uninstall RAID Manager Library:

On **Solaris, AIX, HP-UX, and LINUX**, run the RMLIB uninstall program. To do so, go to /usr/lib/RMLIB and execute the ./rmlibuninstall.sh program.

On **Microsoft Windows NT, 2000, and 2003**, go to **Start>Settings>Control Panel>Add or Remove programs**.

Installing Performance Advisor

Note *Make sure you carefully comply with all pre-installation requirements prior to installing PA.*

Installing PA as a Standalone Application

You can install PA 1.7A if no previous versions of PA have been installed. If previous versions have been installed, please read the following carefully:

If PA 1.7 or 1.7-2 is installed, install PA 1.7A without uninstalling the previous versions. All PA data will be restored upon completion of the installation.

If PA 1.60_x or earlier is installed, you must uninstall PA first. Then install PA 1.7A. Please be aware of the following caution:

Caution *Any previous PA data will NOT be restored when installation has been upgraded to PA 1.7A from PA versions 1.60_x or earlier.*

Note *PA 1.7A will only support patching PA 1.7 or 1.7-2, or it will function as a new installation.*

Upgrading PA When Previous Versions of Command View XP (CV XP) and PA are Installed

Please carefully adhere to the following instructions if you have previously installed CV XP and PA, and are now upgrading to PA 1.7A.

Note *PA 1.7A is only compatible with CV XP 1.8.*

Note *If you are planning to install Command View XP (CV XP) and PA on the same management station, please note that PA 1.7 or earlier uses an older JRE version than the JRE version supported by CV XP 1.8. Using an older JRE than the one supported for CV XP 1.8 may cause display problems in IE browser. To avoid this issue, please follow the installation instructions (below) that fit your management station's configuration.*

If CV XP 1.7x or earlier and PA 1.7 or earlier are installed prior to installing CV XP, follow these instructions:

1. Install CV XP 1.8.
2. If PA 1.7 or 1.7-2 is installed, install PA 1.7A without uninstalling PA 1.7. All PA data will be restored upon completion of the installation. If PA 1.60_x or earlier is installed, you must uninstall PA first. Then install PA 1.7A. Please be aware of the following caution:

Caution *Any previous PA data will NOT be restored when installation has been upgraded to PA 1.7A from PA versions 1.60_x or earlier.*

If you have already installed CV XP 1.8 with another version of PA, please follow the instructions below, depending on the order in which you installed CV XP 1.8 and PA 1.7:

If CV XP 1.8 was installed after PA 1.7 or earlier was installed, then follow these instructions:

- If PA 1.7 or 1.7-2 is installed, install PA 1.7A without uninstalling the earlier versions. All PA data will be restored upon completion of the installation. If PA 1.60_x or earlier is installed, you must uninstall PA first. Then install PA 1.7A. Please be aware of the following caution:

Caution *Any previous PA data will NOT be restored when installation has been upgraded to PA 1.7A from PA versions 1.60_x or earlier.*

If PA 1.7 or earlier was installed after CV XP 1.8, please follow these instructions:

1. Stop all CV XP services.

2. Uninstall JRE 1.4.2.
3. Install JRE 1.4.2.
4. If PA 1.7 or 1.7-2 is installed, install PA 1.7A without uninstalling the previous versions. All PA data will be restored upon completion of the installation. If PA 1.60_x or earlier is installed, you must uninstall PA first. Then install PA 1.7A. Please be aware of the following caution:

Caution *Any previous PA data will NOT be restored when installation has been upgraded to PA 1.7A from PA versions 1.60_x or earlier.*

5. Start all CV XP services.

PA Management Station Installation (Microsoft Windows NT, 2000, and 2003 Operating Systems Only)

Note *Microsoft Windows NT, 2000, and 2003 are the only operating systems supported by the management station.*

Note *Make sure that you install the HP StorageWorks Performance Advisor software on the management station before you install it on the host station.*

Note *If you have already installed Performance Advisor, stop all host agents before upgrading the management station. To do so on Windows machines, go to Start>Settings>Control Panel>Administrative Tools (Windows 2000 and 2003 only)>Services. In Services, highlight HpssPaHostAgent and click **Stop**. For Unix machines, run the `/opt/xppa/xppa.stop` script.*

1. Log in as a user with administrative permissions.
2. Insert the PA software CD into the CD-ROM drive.
3. In the Start menu, click **Programs**.
4. Click **Windows NT, 2000 or 2003 Explorer**, depending on your operating system.
5. In the Exploring window, go to your CD-ROM drive and double-click on the CD-ROM icon.
6. Double-click the PA icon (PA_Server.exe).
7. If JRE 1.4.2 has not been previously installed, the **Question** dialog box will appear with the following message: "hp StorageWorks <name and version number of application> requires JRE 1.4.2. Download and install the Windows Installation 1.4.2 JRE from Sun. After installing JRE 1.4.2, restart this setup. This setup will now exit. Would you like to launch the SUN JRE download web page?"
8. Click **Yes** to launch the download page and install JRE 1.4.2. Click **No** if you prefer to install JRE 1.4.2 using an alternative method. The dialog box will close.

9. After the JRE has been installed, you will need to restart the installation process by double-clicking the PA icon (PA_Server.exe).
10. The InstallShield Wizard Welcome screen will appear.
11. Click **Next** to go to the license agreement screen.
12. Click **Yes** to accept the terms of the PA Software License Agreement.
13. After viewing the System Recommendation dialog box, click **Next**.
14. If Command View XP is not installed, you will be asked to click **Next** or to choose the Destination Location.
15. If Command View XP is not installed, a screen will appear requiring the domain name of the management station. If the system automatically finds a domain name, you will receive the following message: "Use the Domain name shown below or enter the Domain name." Click **Enter** to accept the Domain name shown or enter an alternative Domain name, then click **Enter**. If a domain name is not shown, the following message will appear: "Unable to determine Domain of the Management Station. Enter Domain in the field below." After entering the domain name, click **Enter**.

Note *Consult with your system administrator if you are unsure of the domain name.*

16. Click **OK** to accept the reminder: "Install the Host Agent software. Create and map command devices on the array and host(s). For more information on installing host agent(s) or mapping command devices, see [http\(s\)://\[server name\]/pa/InstallGuide.pdf](http(s)://[server name]/pa/InstallGuide.pdf). If you are going to send alarms via email, set your SMTP servers. For more information on sending alarms, see [http\(s\)://\[server name\]/pa/docs/CONFIG.HTML](http(s)://[server name]/pa/docs/CONFIG.HTML)."
17. When the setup is complete, click **Finish**.

Verify Installation of PA on the Management Station

Confirm major services:

1. In the Start menu, select **Settings>Control Panel**.

2. *Windows NT only:* In the Control Panel, double-click on the Services icon. The Services dialog box will appear.
Windows 2000 and 2003 only: In the Control Panel, double-click on Administrative Tools. Then double-click on the Services icon. The Services dialog box will appear.
3. If Performance Advisor has been installed, then the status of HpssApache, HpssPaSolid, and HpssPaTomcat should be in the Started mode.
4. Close the Services dialog box.

Verify successful installation:

To verify that installation was successful, you should be able to start PA. To do so:

1. Open your web browser.
2. In the URL line, type in your server name followed by pa as follows:
http://[server name]/pa/.
3. This opens PA's default applet. If the DNS server cannot locate the management station, enter: http://[IP address]/pa/.

- ***Install the Performance Advisor host software following the instructions provided below, depending upon your operating system:***

See [“PA Host Agent Installation for Microsoft Windows NT, 2000, and 2003” on page 17.](#)

See [“PA Host Agent Installation for HP-UX, Sun Solaris, Linux and IBM AIX” on page 18.](#)

PA Host Agent Installation for Microsoft Windows NT, 2000, and 2003

Caution *The management station must be installed before the host station(s).*

The InstallShield wizard begins and guides you through all the necessary steps in the installation process. You will need to know the IP address or the fully qualified host name (pingable) of the management station.

Note *Before installing the PA software, make sure that the command device is mapped to the host machine that you will be using to collect data. Also, make sure the command device is **not** shared with any other systems.*

1. Log in as a user with administrative permissions.
2. If you do not have JRE 1.4.2_03 installed on your machine, you can go to <http://java.sun.com> to download the JRE or for more information. You will need JRE 1.4.2_03 or greater for Windows 2003 64-bit host station (in 32-bit compatibility mode).
3. Run NT_W2K_PA_Host.exe from the appropriate directory to start the Host Station install.

Note *If there is 10 MBs or less of free space on the computer, a message will appear prompting you to continue with the installation or abort.*

4. At the Welcome screen, click **Next**.
5. At the License Agreement screen, click **Yes** if you accept the terms.
6. At the Destination Location screen, click **Next** to accept the default, or click **Browse** to choose another destination.
7. At the Management Station Hostname screen, enter the fully qualified host name or IP address (pingable) of the management station.
8. Click **Next** to begin the installation. Installation is now complete for the host station(s).
9. Verify that the PA software has been installed successfully on the host station. To do so, see the next section, "Verify Installation of PA on the Host Station" (page 18).

Verify Installation of PA on the Host Station

To verify that installation was successful, you should be able to start PA.
To do so:

1. Open your web browser.
2. In the URL line, type in your server name followed by pa as follows:
[http://\[server name\]/pa](http://[server name]/pa).
3. Select the Host ID field in the Data Grid screen. Confirm that your host station appears in the drop-down list box. It may take several minutes to appear if your host agent has hundreds or thousands of logical devices. You may need to hit the browser's Refresh button to update the screen with the latest list of host agents.

This opens PA's default applet. If the DNS server cannot locate the management station, enter: [http://\[IP address\]/pa](http://[IP address]/pa).

PA Host Agent Installation for HP-UX, Sun Solaris, Linux and IBM AIX

Note *You will need to know the IP address or the fully qualified host name (pingable) of the management station.*

Note *Before installing Performance Advisor, make sure that the command device is installed on the host machine that you will be using to collect data.*

Note *For Sun Solaris, IBM AIX, and Linux make sure that the command device is **not** shared with any other systems.*

It is assumed that an experienced HP-UX administrator will perform the installation.

1. Login with root level permissions.
2. Create a temporary directory on the Unix host system. For example, create a directory called `/tmp/pahost`:
`#mkdir /tmp/pahost.`

3. Insert the CD into the host CD ROM drive.
4. **HP-UX only:** Mount the CD using either a normal mount or pfs_mount, depending on your system.
5. Copy the following file to the `/tmp/pahost` directory, depending on the system you are running. For example:
Solaris: `sun_pa_host.tar`
AIX: `aix_pa_host.tar`
Linux: `linux_pa_host.tar`
HP-UX 11.XX: `hpux_pa_host.tar`
6. Execute the following commands depending on the system you are running. For example:

HP-UX: `#cd /tmp/pahost`
`#cp /cdrom/host_station/hpux_pa_host.tar /tmp/pahost`

Solaris: `#cd /tmp/pahost`
`#cp /cdrom/host_station/sun/sun_pa_host.tar`
`/tmp/pahost`

AIX: `#cd /tmp/pahost`
`#cp /cdrom/host_station/aix/aix_pa_host.tar`
`/tmp/pahost`

Linux: `#cd /tmp/pahost`
`#cp /cdrom/host_station/linux/linux_pa_host.tar`
`/tmp/pahost`

7. Extract the tar file:
HP-UX 11.XX: `tar -xvf /tmp/pahost/hpux_pa_host.tar`
Solaris: `tar -xvf /tmp/pahost/sun_pa_host.tar`
AIX: `tar -xvf /tmp/pahost/aix_pa_host.tar`
Linux: `tar -xvf /tmp/pahost/linux_pa_host.tar`
8. Execute the install script:
`#./install.sh`
The install script creates the `/opt/xppa` directory.

9. When the `install.sh` script is executed, it makes these checks:
 - Ensures the user has root capabilities
 - Ensures that the system is the appropriate revision
 - Checks to see if RAID Manager Library is installed. If RAID Manager Library is not installed, it will be installed automatically. If RAID Manager Library is installed but doesn't meet the minimum requirements, you will be asked if you want to install the latest version. If you do not want to install the latest version, PA will automatically exit. If RAID Manager Library is installed and meets the minimum requirements but is not the recommended version, then you will be asked if you want to upgrade. If the upgrade is not accepted, you may notice a loss of functionality within Performance Advisor.
10. The following messages will appear:
 - Continue? Answer [y] for yes or [n] for no.
 - Please enter the host name or IP address (pingable) or enter Exit to abort.
 - Sending output to `nohup.out`.
11. If your command prompt does not return, press **Enter**.
12. To verify installation, use the `ps -efxppa` or `ps -f | grep <process ID>` (where the *process ID* is contained in the file `.ourpid`) command to verify that the following host service is running:

```
/opt/xppa/jre/bin/../../bin/PA_RISC/native_threads/jre  
-Xss500k
```

Note *Substitute java for jre if applicable.*

Creating a Command Device

Customers who are currently running RAID Manager (Business Copy and Continuous Access) will have command devices already in place that can be used for PA. If RAID Manager is not currently in use, you will need to

create a command device. To do so, you can use either the Remote Control or Command View XP applications.

Note *If you need further assistance, please contact your certified HP technical support representative.*

To create a command device, follow the instructions below:

Remote Control

1. Connect to the desired array.
2. Go to the LUN Management application.
3. From the menu, select the offline mode.
4. Highlight the volume to be used as a command device.

Caution *Be certain that there is no data on a volume you select as a command device. Any data that might reside on the volume you select becomes inaccessible to the host. Also, make sure no file system has been mounted and no data is stored there.*

5. Click the Command Device button.
6. Click OK.

Command View XP

1. Log in as administrator.
2. Connect to the desired array.
3. Click on the LUN Management tab.
4. Highlight the volume to be used as a command device.

Caution *Be certain that there is no data on a volume you select as a command device. Any data that might reside on the volume you select becomes inaccessible to the host. Also, make sure no file system has been mounted and no data is stored there.*

5. Follow the instructions provided for your array:
For XP256, XP48, and XP512: Click **Set/Release Cmd Dev.**
For XP128 and XP1024: Right-click on the highlighted volume and select **Command Device: OFF->ON**. Click **Yes** in the resulting dialog box. Your command device is now set and indicated by "C" on the volume icon in the LUN column.

Note *The volume designated as the command device is used only by the disk array and is blocked from the user. The command device can be any device that is accessible by the host.*

The command device uses 16 MB of space. The remaining volume space is reserved for RAID Manager and its utilities. You cannot use logical unit size expansion (LUSE) volumes as a command device; however, you can use custom volume size (CVS) devices as small as 36 MB.

Stopping and Starting Services

Performance Advisor allows you to stop, start, or restart services. To do so, follow these instructions:

Starting and Stopping Performance Advisor

The Performance Advisor services start automatically after installation and when the machine is restarted.

To stop services:

Select **Start > Programs > hp StorageWorks performance advisor > Stop Services**.

To start services:

Select **Start > Programs > hp StorageWorks performance advisor > Start Services**.

To restart services:

Select **Start > Programs > hp StorageWorks performance advisor > Restart Services.**

Using Performance Advisor

How to Use Performance Advisor

1. To begin viewing data collected by the PA software, type:
<http://<systemname>/pa/>.
2. Enter the password for PA. Passwords are required to access PA and the PA configuration screens. To access PA, enter `paxp` for the user name and `xparray` for the password. To access the configuration screens, the user name is `confmonxp` and the password is `redstar`.

Note *Refer to the PA configuration document (Config.html) for instructions on changing the password. The default user name and password used to access and administrate the HP StorageWorks Performance Advisor software are known by HP service personnel and can be seen by anyone with access to the ServerRoot subdirectory. The information cannot be accessed through the Web.*

3. Go to the Configuration tab to access the Data Collection Configuration screen. To begin collecting data, choose a command device on the host you want to use. Perform data collection on only one host per array. For more information, see the online Help associated with the Data Collection Configuration screen.

Note *Please follow a general rule of 1 minute per 1000 LDEVs for the management station (PC) to keep up with collection. Remember that PA collects performance data on all LDEVs in the array. It is not limited to the number of LDEVs the host station is mapped to use. **Setting the collection rate too narrow hampers the management station, diminishing its responsiveness.***

Verifying and Demonstrating PA

Using Performance Advisor without Hosts or Arrays

The following instructions will allow you to use simulated data to verify proper installation of Performance Advisor (PA) or to demonstrate PA on a PC.

Note *An array connection is not needed.*

1. Install the PA host agent on a PC (follow the installation instructions provided in chapter 1).
2. Open PA in a web browser.
3. Select the Configuration tab.
4. Select the Array Information tab.
5. At the Array Information screen, look under the Host column.
6. Highlight the row that provides the name of the machine where you just installed the host agent.

7. Click **Remove Host**.
8. Click **Submit**. You have now removed a host with no LDEVs. This host will be replaced with a host containing simulated LDEVs.
9. Go to the Services control panel (located at **Start>Settings>Control Panel>Administrative Tools** (Windows 2K only)>**Services**).
10. Locate and stop HpssPaHostAgent service.
11. Close the Services window.
12. On the PA CD ROM, locate and copy the following PA distribution file at Tools/SimulatedHostData: windows_tiny_port_mapping.cmds.
13. Locate the PA host agent directory on your PC (default = *C:\Program Files\Hewlett-Packard\Performance Advisor\Host Agent*).
14. Paste the cmds file from step 12, above, into the Host Agent directory.
15. Open the HostAgent.properties file.
16. Locate the following text: # XpinfoEmulationFilename. Remove the pound sign (#) and space that appear before XpinfoEmulationFilename. Replace the following phrase, expinfo.cmds, with the name of the file copied in step #12: windows_tiny_port_mapping.cmds.
17. Save and close the properties file.
18. Return to the Services control panel (located at **Start>Settings>Control Panel>Administrative Tools** [Microsoft Windows 2000 and 2003 only]>**Services**).
19. Select and start HpssPaHostAgent Service.
20. Close the Services window.
21. Go to your web browser.
22. Click **Refresh**. Note that if the hour glass is active in your web browser, it means that configuration information is still being received by the management station.

You can now select the Data Collection tab and make your data collection request as you would with real data. For more information

about using the Data Collection Screen, see Performance Advisor's online help.

Note *The `cmds` file that you have configured provides ports with non-LUSE connections on Cluster 1 and LUSE connections on cluster 2.*

Uninstalling Performance Advisor

Steps to Uninstalling Performance Advisor

Uninstalling PA Management Station for Windows NT, 2000, and 2003

To uninstall Performance Advisor, follow these instructions:

1. In the Start menu, select **Settings>Control Panel**.
2. In the Control Panel, double-click on **Add/Remove Programs**.
3. At the Install/Uninstall tab, click **HP StorageWorks Performance Advisor**.
4. Click **Add/Remove**. The InstallShield Wizard Welcome screen appears, giving you 3 options: 1) Modify; 2) Repair; and 3) Remove. The only available option is *Remove*, which is the default option.
5. Click **Next**. A Confirm File Deletion Box may appear.
6. Click **Yes**. The following message will appear if PA was installed before Command View XP and if Command View XP has been uninstalled: "The InstallShield Wizard has successfully uninstalled performance advisor. For all changes to take affect, you must restart your computer."

Caution *The following two scenarios will require a reboot: 1) PA was operated as a standalone product and subsequently uninstalled, or 2) Command View XP was installed after you installed PA. Subsequently, Command View XP was uninstalled and then PA was uninstalled.*

It is important that you reboot the machine to completely remove the Apache service. Otherwise, this service will not be removed and problems may arise later.

Uninstalling PA Host Agent for HP-UX, Sun Solaris, IBM AIX, and Linux

Note *Host agent software, root capabilities, and user confirmation are required.*

To uninstall PA for HP-UX and Solaris, run the `/opt/xppa/uninstall.sh` script.

Uninstalling PA Host Agent for Windows NT, 2000, and 2003

Make sure that the XpStart service is stopped. To stop this service, follow these instructions:

1. In the Start menu, select **Settings>Control Panel**.
2. In the Control Panel, double-click on **Add/Remove Programs**.
3. At the Install/Uninstall tab, click **HP StorageWorks Performance Advisor host agent**.
4. Click **Add/Remove**. The InstallShield Wizard Welcome screen appears, giving you 3 options: 1) Modify; 2) Repair; and 3) Remove. The only available option is *Remove*, which is the default option.
5. Click **Next**. A **Confirm File Deletion** Box may appear.

6. Click **Yes**. An information dialog box will appear stating that all folders/files have not been deleted. You will need to manually remove them. By default, the files are located at `c:\Programs Files\Hewlett-Packard\Performance Advisor\Host Agent`.
7. Click **OK**.
8. Click **Finish**.

